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codes and messages that will be transmitted by key EAS sources (NP, LP, SP and SR). State and local plans contain unique methods of EAS message distribution such as the use of the Radio Broadcast Data System (RBDS). The plans must be reviewed and approved by the Director, Office of Homeland Security, Enforcement Bureau, prior to implementation to ensure that they are consistent with national plans, FCC regulations, and EAS operation.

(a) The State plan contains procedures for State emergency management and other State officials, the NWS, and EAS Participants' personnel to transmit emergency information to the public during a State emergency using the EAS.

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Subpart B—Equipment Requirements

§ 11.31 EAS protocol.

(a) The EAS uses a four part message for an emergency activation of the EAS. The four parts are: Preamble and EAS Header Codes; audio Attention Signal; message; and, Preamble and EAS End Of Message (EOM) Codes.

(1) The Preamble and EAS Codes must use Audio Frequency Shift Keying at a rate of 520.83 bits per second to transmit the codes. Mark frequency is 2083.3 Hz and space frequency is 1562.5 Hz. Mark and space time must be 1.92 milliseconds. Characters are ASCII seven bit characters as defined in ANSI X3.4-1977 ending with an eighth null bit (either 0 or 1) to constitute a full eight-bit byte.

(2) The Attention Signal must be made up of the fundamental frequencies of 853 and 960 Hz. The two tones must be transmitted simultaneously. The Attention Signal must be transmitted after the EAS header codes.

(3) The message may be audio, video or text.

(b) The ASCII dash and plus symbols are required and may not be used for any other purpose. FM or TV call signs must use a slash ASCII character number 47 (/) in lieu of a dash.

(c) The EAS protocol, including any codes, must not be amended, extended or abridged without FCC authorization. The EAS protocol and message format

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are specified in the following representation.

Examples are provided in FCC Public Notices.

[PREAMBLE]ZCZC-ORG-EEE-
PSSCCC+TTTT-JJJHHMM-LLLLLLLLL-
(one second pause)

[PREAMBLE]ZCZC-ORG-EEE-
PSSCCC+TTTT-JJJHHMM-LLLLLLLLL-
(one second pause)

[PREAMBLE]ZCZC-ORG-EEE-
PSSCCC+TTTT-JJJHHMM-LLLLLLLLL-(at
least a one second pause)

(transmission of 8 to 25 seconds of Attention
Signal)

(transmission of audio, video or text mes-
sages)

(at least a one second pause)

[PREAMBLE]NNNN (one second pause)

[PREAMBLE]NNNN (one second pause)

[PREAMBLE]NNNN (at least one second
pause)

[PREAMBLE] This is a consecutive string of bits (sixteen bytes of AB hexadecimal [8 bit byte 10101011]) sent to clear the system, set AGC and set asynchronous decoder clocking cycles. The preamble must be transmitted before each header and End Of Message code.

ZCZC—This is the identifier, sent as ASCII characters ZCZC to indicate the start of ASCII code.

ORG—This is the Originator code and indicates who originally initiated the activation of the EAS. These codes are specified in paragraph (d) of this section.

EEE—This is the Event code and indicates the nature of the EAS activation. The codes are specified in paragraph (e) of this section. The Event codes must be compatible with the codes used by the NWS Weather Radio Specific Area Message Encoder (WRSAME).

PSSCCC—This the Location code and indicates the geographic area affected by the EAS alert. There may be 31 Location codes in an EAS alert. The Location code uses the Federal Information Processing Standard (FIPS) numbers as described by the U.S. Department of Commerce in National Institute of Standards and Technology publication FIPS PUB 6-4. Each state is assigned an SS number as specified in paragraph (f) of this section. Each county and some cities are assigned a CCC number. A CCC number of 000 refers to an entire State or Territory. P defines county subdivisions as follows: 0 = all or an unspecified portion of a county, 1 = Northwest, 2 = North, 3 = Northeast, 4 = West, 5 = Central, 6 = East, 7 = Southwest, 8 = South, 9 = Southeast. Other numbers may be designated later for special applications. The use of county subdivisions will probably be rare and generally for oddly shaped or unusually large counties. Any subdivisions

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must be defined and agreed to by the local officials prior to use.

+TTTT—This indicates the valid time period of a message in 15 minute segments up to one hour and then in 30 minute segments beyond one hour; i.e., +0015, +0030, +0045, +0100, +0430 and +0600.

JJJHHMM—This is the day in Julian Calendar days (JJJ) of the year and the time in hours and minutes (HHMM) when the message was initially released by the originator using 24 hour Universal Coordinated Time (UTC).

LLLLLLLL—This is the identification of the broadcast station, cable system, BRS/EBS station, NWS office, etc., transmitting or retransmitting the message. These codes will be automatically affixed to all outgoing messages by the EAS encoder.

NNNN—This is the End of Message (EOM) code sent as a string of four ASCII N characters.

(d) The only originator codes are:

Originator	ORG Code
Broadcast station or cable system	EAS
Civil authorities	CIV
National Weather Service	WXR
Primary Entry Point System	PEP

(e) The following Event (EEE) codes are presently authorized:

Nature of Activation	Event Codes
National Codes (Required):	
Emergency Action Notification (National only)	EAN
Emergency Action Termination (National only)	EAT
National Information Center	NIC
National Periodic Test	NPT
Required Monthly Test	RMT
Required Weekly Test	RWT
State and Local Codes (Optional):	
Administrative Message	ADR
Avalanche Warning	AVW ¹
Avalanche Watch	AVA ¹
Blizzard Warning	BZW
Child Abduction Emergency	CAE ¹
Civil Danger Warning	CDW ¹
Civil Emergency Message	CEM
Coastal Flood Warning	CFW ¹
Coastal Flood Watch	CFA ¹
Dust Storm Warning	DSW ¹
Earthquake Warning	EQW ¹
Evacuation Immediate	EVI
Fire Warning	FRW ¹
Flash Flood Warning	FFW
Flash Flood Watch	FFA
Flash Flood Statement	FFS
Flood Warning	FLW
Flood Watch	FLA
Flood Statement	FLS
Hazardous Materials Warning	HMW ¹
High Wind Warning	HWW
High Wind Watch	HWA
Hurricane Warning	HUW
Hurricane Watch	HUA
Hurricane Statement	HLS
Law Enforcement Warning	LEW ¹

Nature of Activation	Event Codes
Local Area Emergency	LAE ¹
Network Message Notification	NMN ¹
911 Telephone Outage Emergency	TOE ¹
Nuclear Power Plant Warning	NUW ¹
Practice/Demo Warning	DMO
Radiological Hazard Warning	RHW ¹
Severe Thunderstorm Warning	SVR
Severe Thunderstorm Watch	SVA
Severe Weather Statement	SVS
Shelter in Place Warning	SPW ¹
Special Marine Warning	SMW ¹
Special Weather Statement	SPS
Tornado Warning	TOR
Tornado Watch	TOA
Tropical Storm Warning	TRW ¹
Tropical Storm Watch	TRA ¹
Tsunami Warning	TSW
Tsunami Watch	TSA
Volcano Warning	VOW ¹
Winter Storm Warning	WSW
Winter Storm Watch	WSA

¹ Effective May 16, 2002, broadcast stations, cable systems and wireless cable systems may upgrade their existing EAS equipment to add these event codes on a voluntary basis until the equipment is replaced. All models of EAS equipment manufactured after August 1, 2003 must be capable of receiving and transmitting these event codes. Broadcast stations, cable systems and wireless cable systems which replace their EAS equipment after February 1, 2004 must install equipment that is capable of receiving and transmitting these event codes.

(f) The State, Territory and Offshore (Marine Area) FIPS number codes (SS) are as follows. County FIPS numbers (CCC) are contained in the State EAS Mapbook.

	FIPS#
State:	
AL	01
AK	02
AZ	04
AR	05
CA	06
CO	08
CT	09
DE	10
DC	11
FL	12
GA	13
HI	15
ID	16
IL	17
IN	18
IA	19
KS	20
KY	21
LA	22
ME	23
MD	24
MA	25
MI	26
MN	27
MS	28
MO	29
MT	30
NE	31
NV	32
NH	33
NJ	34
NM	35
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	FIPS#
NC	37
ND	38
OH	39
OK	40
OR	41
PA	42
RI	44
SC	45
SD	46
TN	47
TX	48
UT	49
VT	50
VA	51
WA	53
WV	54
WI	55
WY	56
Terr.:	
AS	60
FM	64
GU	66
MH	68
PR	72
PW	70
UM	74
VI	78
Offshore (Marine Areas) ¹ :	
Eastern North Pacific Ocean, and along U.S. West Coast from Canadian border to Mexican border	
North Pacific Ocean near Alaska, and along Alaska coastline, including the Bering Sea and the Gulf of Alaska	
Central Pacific Ocean, including Hawaiian waters	
South Central Pacific Ocean, including American Samoa waters	
Western Pacific Ocean, including Mariana Island waters	
Western North Atlantic Ocean, and along U.S. East Coast, from Canadian border south to Currituck Beach Light, N.C.	
Western North Atlantic Ocean, and along U.S. East Coast, south of Currituck Beach Light, N.C., following the coastline into Gulf of Mexico to Bonita Beach, FL., including the Caribbean ..	
Gulf of Mexico, and along the U.S. Gulf Coast from the Mexican border to Bonita Beach, FL ...	
Lake Superior	
Lake Michigan	
Lake Huron	
Lake St. Clair	
Lake Erie	
Lake Ontario	
St. Lawrence River above St. Regis	

¹Effective May 16, 2002, broadcast stations, cable systems and wireless cable systems may upgrade their existing EAS equipment to add these marine area location codes on a voluntary basis until the equipment is replaced. All models of EAS equipment manufactured after August 1, 2003, must be capable of receiving and transmitting these marine area location codes. Broadcast stations, cable systems and wireless cable systems which replace their EAS equipment after February 1, 2004, must install equipment that is capable of receiving and transmitting these location codes.

[59 FR 67092, Dec. 28, 1994, as amended at 60 FR 55999, Nov. 6, 1995; 61 FR 54952, Oct. 23, 1996; 63 FR 29663, June 1, 1998; 67 FR 18508, Apr. 16, 2002; 67 FR 77174, Dec. 17, 2002; 69 FR 72031, Dec. 10, 2004]

EFFECTIVE DATE NOTE: At 70 FR 71033, Nov. 25, 2005, §11.31 was amended by revising the format code for LLLLLLLL in paragraph (c), revising paragraph (d), and revising the footnotes in paragraphs (e) and (f), effective Dec. 31, 2006. For the convenience of the user, the revised text is set forth as follows:

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* * * * *

(c) * * *

LLLLLLLL—This is the identification of the EAS Participant, NWS office, etc., transmitting or retransmitting the message. These codes will be automatically affixed to all outgoing messages by the EAS encoder.

* * * * *

(d) The only originator codes are:

Originator	ORG code
EAS Participant	EAS
Civil authorities	CIV
National Weather Service	WXR
Primary Entry Point System	PEP

(e) * * *

¹Effective May 16, 2002, analog radio and television broadcast stations, analog cable systems and wireless cable systems may upgrade their existing EAS equipment to add these event codes on a voluntary basis until the equipment is replaced. All models of EAS equipment manufactured after August 1, 2003 must be capable of receiving and transmitting these event codes. EAS Participants that install or replace their EAS equipment after February 1, 2004 must install equipment that is capable of receiving and transmitting these event codes.

(f) * * *

¹Effective May 16, 2002, analog radio and television broadcast stations, analog cable systems and wireless cable systems may upgrade their existing EAS equipment to add these marine area location codes on a voluntary basis until the equipment is replaced. All models of EAS equipment manufactured after August 1, 2003, must be capable of receiving and transmitting these marine area location codes. EAS Participants that install or replace their EAS equipment after February 1, 2004, must install equipment that is capable of receiving and transmitting these location codes.

§ 11.32 EAS Encoder.

(a) EAS Encoders must at a minimum be capable of encoding the EAS protocol described in §11.31 and providing the EAS code transmission requirements described in §11.51. EAS